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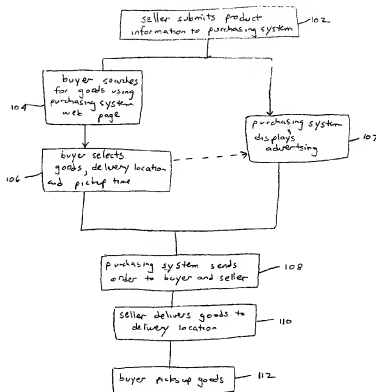
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(54) Title: INTERNET PURCHASING AND ORDER FULFILLMENT SYSTEM



(57) Abstract: A computer-implemented purchasing system enables a buyer to select from multiple products offered by multiple sellers with separate inventory systems. Each seller can designate one or more pickup locations. And when the buyer purchases a product, the buyer can select one of the pickup locations (106). Then the purchasing system provides an order report to the seller identifying the selected goods and pickup location (108). The selected pickup location can be an intermediate location that differs from locations where the seller maintains a regular inventory and from any of the buyer's primary addresses.

Cross-geographic advertising can be displayed on the web page based on the buyer's selection of a pickup location.

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INTERNET PURCHASING AND ORDER FULFILLMENT SYSTEM

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BACKGROUND

The present application relates to purchasing goods using the Internet and fulfilling the resulting orders.

Conventional electronic commerce systems permit a buyer to use the Internet to purchase goods from a seller. For electronic goods, such as software and music, the buyer can download data or files directly from the seller's web site. For physical goods, such as books or computers, the seller typically relies on a third party shipper, such as Federal Express or UPS, to deliver the goods to the buyer. The seller benefits from a centralized inventory, and the buyer benefits from the powerful search and electronic payment capabilities of on-line shopping. However, relatively small direct-to-consumer shipments incur delays and costs created by third-party shipping that are larger in comparison to those of traditional retail shopping.

Other electronic commerce systems permit interactive bidding using the Internet. In a "traditional" auction system, such as that implemented at www.ebay.com, buyers submit bids that can be accepted by a seller. In a "reverse" auction system, such as that implemented at www.priceline.com, the buyer submits an irrevocable bid to buy that is either accepted or denied by the seller. Both these auction systems require buyer bidding, which favors the seller. In addition, shipping is not integrated into these auction systems, and buyers must correspond with the seller, e.g., by electronic mail, to arrange for delivery of the goods separate from the auction system.

Another electronic commerce system, implemented at www.tirenets.com, permits consumers to use the Internet to purchase tires from a network of dealers. The system then places the consumer in contact with the dealer to schedule an installation.

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SUMMARY

In one aspect, the invention is directed to a method performed by a computer-implemented purchasing system. In the method, a first user input is received from a seller indicating a product identification for each of a plurality of goods, and one or more pickup locations that differ from locations where the seller maintains a regular inventory. A

second user input is received from a buyer selecting one of the goods and one of the pickup locations. The selected pickup location is an intermediate location that differs from any of the buyer's primary addresses. An order report is provided to the seller identifying the selected goods and pickup location.

5 Implementations of the invention may include one or more of the following features. The product identification and a price for at least some of the plurality of goods may be displayed to the buyer on a web page. For each good, each pickup location may have an associated price. The first user input may also indicate permitted pickup times, and the second input from the buyer may also selects a pickup time from the permitted
10 pickup times. For each good, each permitted pickup time may have an associated price. Locational information, e.g., the buyer's home address and work address, may be received from the buyer, and at least one proposed pickup location, e.g., near the buyer's travel route between home and work, can may be displayed based on the locational information from the buyer. The user input from the seller can specify at least two pickup locations
15 each associated with different goods. The first and second user inputs can be received through a web site, an automated telephone system, or a personal digital assistant (PDA) device. The price can be adjusted based on the selected pickup location.

In another aspect, the invention is directed to a method performed by a computer-implemented purchasing system. In the method, a first user input is received from each of
20 a plurality of sellers. Each first user input indicates a product identification for at least one good and one or more pickup locations that differ from locations where the seller maintains a regular inventory. A second user input is received from a buyer selecting one of the goods and one of the pickup locations. The selected pickup location is an intermediate location that differs from any of the buyer's primary addresses. An order
25 report identifying the selected goods and pickup location is provided to the seller associated with the selected goods.

In another aspect, the invention is directed to a method performed by a computer-implemented purchasing system. In the method, a first user input is received from each of a plurality of sellers who operate independent inventory systems. Each first user input
30 indicating a product identification for at least one good and a plurality of pickup locations. A second user input is received from a buyer selecting one or more of the goods and one of the pickup locations. An order report is provided to the seller associated with the

selected one or more of the goods identifying the selected goods and the selected pickup location.

Implementations of the invention may include one or more of the following features. Before receiving the second user input, a third user input may be received from a buyer indicating a first location, and a list including goods from a seller with a pickup location within a predetermined distance of the first location may be displayed on a web page being viewed by the buyer. The first user input may identify a plurality of pickup times, the second user input may select one of the pickup times, and the selected pickup time may be provided in the order report. The price for the selected good may be adjusted based on the distance between the first location and the pickup location. An identification number may be assigned to the buyer. The second user input may be a numeric input that includes the identification number. The numeric input may be generated by an automated telephone system or portable personal digital assistant (PDA). Advertisements containing a telephone number and a numeric code or a barcode for at least one of the plurality of goods may be distributed. The PDA may include a barcode scanner, and the barcode may be scanned to generate the numeric input.

In another aspect, the invention is directed to a method performed by a purchasing system. A first user input is received from each of a first plurality of sellers, and a second user input is received from each of a second plurality of sellers who operate independent inventory systems. Each first user input indicates at least one location for an associated seller, and each second user input indicates a product identification for each of a plurality of goods and one or more pickup locations. A third user input is received from a buyer selecting one or more of the goods and one of the pickup locations, and identifying a pickup time, and one of the first plurality of sellers is selected based on a comparison of the first location and the pickup location. An advertisement for the selected seller is displayed on a web page being viewed by the buyer.

Implementations of the invention may include one or more of the following features. The second user input may indicate a pickup time, and one of the sellers may be selected based on the pickup time. The second user input may indicate a good, and one of the sellers may be selected based on the good. Information concerning previous transactions by the buyer may be retrieved, and one of the sellers may be selected based on the previous transactions. The second location may be a primary address of the buyer,

such as a home address or a business address, an intermediate location, or a location of the seller's inventory.

In another aspect, the invention is directed to a method of operating an inventory system. In the method, inventory is stored in a region accessible to a customer. The customer is provided with identification. An order for a good ordered by a buyer other
5 than the customer is received, and good ordered by the buyer is identified in a manner visible to the customer. A credit is provided to the customer if the customer brings the good ordered by the buyer to a specified location and provides the identification.

Implementations of the invention may include one or more of the following
10 features. The identification may be a magnetic card or an identification number. The specified location may be a bin located in the region accessible to the customer or a service center.

In another aspect, the invention is directed to a method of extracting information concerning buyers on a computer-implemented purchasing system. In the method, a first
15 user input is received from each of a first plurality of buyers. Each of the first user inputs specifies at least one primary address for an associated buyer. A plurality of second user inputs is received from each of the first plurality of buyers, each selecting a good and a pickup location. The first plurality of buyers is sorted into a second plurality of buyers and a third plurality of buyers based on distances between the addresses and the pickup
20 locations.

Implementations of the invention may include one or more of the following features. An average of the distances between the primary addresses and the pickup locations may be greater for the second plurality of buyers than the third plurality of buyers. An advertisement may be delivered to one of the buyers. The advertisement may
25 be selected from a plurality of advertisements based on whether the one buyer is a member of the first or second pluralities.

In another aspect, the invention is directed to a method of operating an inventory system. An inventory tracking program is run to track inventory stored in a plurality of locations including a retail outlet, a local warehouse, and a regional warehouse. An order
30 is received from a buyer identifying a product and a pickup time, and one of the plurality of locations is selected automatically based on a time between a time of the order and the pickup time. The product is retrieved from the selected location.

Implementations of the invention may include one or more of the following features. A product price may be adjusted for a buyer based on the selected location or on a difference between a time of the order and the pickup time.

In another aspect, the invention is directed to a method in which a pickup location, other than a residential address of a buyer, is identified, a user input is received from a buyer selecting a good and a pickup time, the buyer is provided with an authorization code, the selected good is stored in at least one compartment of a securable container having a plurality of compartments at the pickup location, and the at least one compartment is opened upon receipt of the authorization code.

Advantages of the invention may include one or more of the following. The purchasing system combines the ease of searching, selecting and paying for goods over the Internet, with the efficiency of centralized inventory information and the convenience of local pickup. Geographically dispersed sellers can easily upload product information into the database and begin selling, and sellers can easily modify and update product listings using the Web or a telecommunications device. One can create of multistore purchase tracking and loyalty programs that reward shoppers for shopping at any member stores, even if the stores have different inventory systems or lack inventory systems. The system permits buyers to minimize or eliminate the cost of delivery to their homes or offices, and reduces overall delivery times by making it easy to have orders fulfilled at nearby or other convenient locations. Existing investments in retail space, inventory management and distribution systems can be extended into new sales channels for further efficiency. Because orders can be received ahead of time and without ordering from a specific location, the system allows for enhanced efficiency in sourcing and display of products by the seller. Because information is kept on product locations across a variety of stores, the system allows retailers to expand their options for restocking to other retailers. Because orders can be received and even picked up without local sales personnel, the system allows for more efficient use of local staff. Because buyers are brought to specific locations, typically at specific times, electronic location-based and even time-based cross-selling can be performed across entirely different product lines or selling organizations. The system allows customers to create maintain and change shopping lists easily at a variety of stores and facilitates convenient ordering and payment for goods at local stores, especially in regard to advertisements for particular goods. An auction system can be implemented in

which sellers bid to deliver specific goods to specific locations, thereby driving product and delivery prices downward.

BRIEF DESCRIPTION OF THE DRAWINGS

5 Figure 1 is a schematic diagram of a purchasing system that can be used to practice the present invention.

 Figure 2 is a schematic diagram illustrating the functional aspects of an interface between the purchasing system and a seller.

10 Figure 3 is a schematic diagram illustrating the functional aspects of an interface between the purchasing system and a customer.

 Figure 4 is a schematic diagram illustrating the functional aspects of an interface between the purchasing system and a bank.

 Figure 5 is a flowchart illustrating a method performed with the purchasing system of the present invention.

15 Figure 6 is a more detailed flowchart illustrating the method performed with the purchasing system of the present invention.

 Figure 7 is a flowchart illustrating the method of submitting product information to the purchasing system.

20 Figure 8 is a flowchart illustrating a method of conducting an auction using the purchasing system.

 Figure 9 illustrates a modified personal digital assistant (PDA) and a store flyer that can be used in the method of the present invention.

 Figure 10 is a flowchart illustrating the method of delivering the ordered goods to a pickup location.

25 Figure 11 is a schematic illustration of a multicompartment container used to store goods at the pickup location.

DETAILED DESCRIPTION

30 In brief, the invention relates to a purchasing system to which both buyers and sellers (collectively, "users") can connect using a computer network, such as the Internet, or telecommunication devices. The purchasing system permits sellers to list the goods being sold, and permits buyers to search and select goods to purchase. In general, the

seller can be an individual, retailer, wholesaler, distributor, or manufacturer. Similarly, the buyer can be an individual, retailer, wholesaler, distributor, or manufacturer. The purchasing system also allows the users to make mutually convenient delivery and pickup arrangements. The purchasing system then facilitates delivery of the goods to a selected pickup location at a selected time. The selected location can be an intermediate location, i.e., a place other than the location of the seller's inventory or the buyer's home or business. While the buyer is connected to the purchasing system, the purchasing system can display advertisements for businesses selling complementary goods and advertisements for businesses located near the pickup location or on the buyer's travel route.

Figures 1-4 illustrate a purchasing system 10 and its functional interaction with a buyer, a seller and a bank. The purchasing system includes a general purpose programmable digital computer system 14 (such as a personal computer or work station) of conventional construction, including a memory and a processor for running a purchasing system program 12. The computer system 14 also includes conventional communications hardware and software by which the computer system is connected to other computer systems, including a seller's computer system 16 and a buyer's computer system 18, by a computer network 20, such as the Internet. The buyer and seller computer systems can access the purchasing system using conventional web browser applications 22.

Specifically, the purchasing system 10 maintains a web site that is accessible to both buyers and sellers using the Internet. The purchasing system also maintains several databases or database tables, including a seller database 30 to store information about the sellers, a buyer database 32 to store information about the buyers, a product list database 34 to store information about the goods that can be purchased, and a transaction database 36 to store information about purchases. The purchasing system 10 is also connected to one or more bank computer systems 24 by the Internet, as shown, or by a continuous or intermittent telephonic dataline connection. Although illustrated as a single computer, each computer system can be a distributed system implemented on a network. For some purposes, a computer interface can be replaced with a telephone, pager or other interactive device.

The overall method performed using the purchasing system is illustrated in Figures 2-5. Initially, a seller submits its product information, such as the price and description of

the goods the seller is offering, to the purchasing system (step 102). When a buyer visits the web site associated with the purchasing system, the buyer can browse the web site or perform a search operation to identify products of interest (step 104). For each product, the purchasing program displays a price and a list of locations, potentially within a geographic area previously specified by the buyer, where the goods can be picked up. The buyer selects the goods to purchase, as well as a pickup location and a pickup time (step 106). As the buyer is searching for and selecting goods, the purchasing system can perform geographically-based and time-based cross-selling (step 107). Once the buyer purchases the goods, the purchasing system generates an order that is sent to both the buyer and seller (step 108). After the seller receives the order, the seller retrieves and packages the goods and moves the goods to the specified pickup location (step 110). Finally, the buyer arrives at the specified pickup location at or after the pickup time and collects the goods (step 112).

As shown in Figure 7, to submit the product information in step 102, the seller begins by registering on the purchasing system (step 120). In one implementation, the seller fills out a registration form on the purchasing system web site. The registration form requests identifying information, such as the name, address, phone and fax number, contact names, chain name and chain web site (if any), and hours of the seller. The information can also include one or more associated pickup locations and the available pickup hours and whether there is a drive-through option for pickup at each pickup location. The purchasing system can convert the pickup locations provided by the seller into longitude and latitude or other convenient locational data. The seller also provides a phone number, fax number, pager number, electronic mail or other method for the purchasing system to contact the seller with orders, and a deposit account bank and bank account number for the purchasing system to deposit payments from buyers. The purchasing system can also query the seller for a password to authorize changes to the seller's registration information or product information. The purchasing system can assign the seller a store identification number (a "StoreID"). This information is stored in the sellers database 30. Of course, the seller can provide this information to the purchasing system by a variety of methods including facsimile, telephone, electronic mail, or PDA(personal digital assistant) with wireless connection, and the information can be entered manually in the seller database 30.

Once the seller has registered and paid any required registration fees (step 121), information concerning the products that the seller is offering can be loaded into the product list database 34. The information loaded into the product list database 34 includes at least a product identifier, and a price and for each product. Quantities can also be included in the product list database. If the seller has specified more than one pickup location, then there can be different prices for different locations. A full product listing could include one or more of the following: universal product code number (UPC#), a manufacturer, a product name, a product description, product features, an image, a model number, a model name, a manufacturers suggested retail price, one or more category identification numbers to assist in searching, a category name, product dimensions (length, width and height), weight, and data specific to the type of product such as size, color, and style. The product listing can also include reviews or links to product reviews, a list of locations where the product is typically or currently stocked, a listing status (i.e., "listed" or "delisted", described below) and a minimum stock level. If the current stock falls below the minimum stock level, the purchasing system database can automatically delist the product. A delisted product is not displayed in the buyer's search, thereby ensuring that the seller does not run out of inventory. The listing can also include information about where a product is located in a particular local inventory, e.g., a shelf location. The purchasing system also assigns a unique product identification number (productID) for each product when it is entered into the product list database, e.g., by concatenating the StoreID with the UPC#.

The purchasing system provides several methods for sellers to upload their product data. In one implementation, the seller creates a file manually, e.g., using a conventional word processor or spreadsheet program, with the product information, i.e., the product identifier and price of the goods being sold (steps 122 and 144). The file has a format that the purchasing system is configured to interpret. For example, the product data could be formatted as a tab-delimited table with a Universal Product Code Number (UPC#) and a price for each product. Of course, more complex file formats can be used, and the file can include any or all of the information needed for the product listing described above. The seller sends the file to the purchasing system as an attachment with an electronic mail message (step 124). The purchasing system receives the message and extracts the product information from the file (step 126).

In another implementation, the seller can access the purchasing system web site (step 128), and enter the product information manually on an electronic form (step 130). If the seller does not know the UPC#, the seller can access a search program on the purchasing system web site to manually enter keywords, such as the brand name, manufacturer name, and product description (step 132). In this system, the purchasing system includes a generic product database 38 (see Figure 1) with product information linked to UPC numbers. The purchasing system searches the generic product database and generates a list of potentially matching products. The seller then selects the product from the list and manually enters the required price and quantity information.

In still another implementation, the purchasing system operator can provide the seller with a small product scanning system, such as a scanning wand 40 with associated inventory software 42 (see Figure 1). In this option, the seller scans the products with the scanning wand 40 (step 140), the inventory software creates a file with the UPC# of each product scanned (step 142), and the seller enters the price and quantity into the file (step 144). This file is then sent by electronic mail to the purchasing system (step 124). The scanning system can be integrated into an automatic inventory tracking system or be linked directly to the purchasing system through wireless technology.

Once the product information is uploaded, the purchasing system identifies the product identifier, e.g., the UPC#, for each product (step 150). Each product can be matched with information from the generic product database and/or the purchasing system database to complete any blank fields in the product listing (step 152). These goods are then added to the product list database (step 154).

In another implementation, the seller maintains an automated inventory tracking system, e.g., a computer system that stores a UPC# or a stock keeping unit number (SKU#), price and current quantity of each product. Such an automated inventory tracking system typically is electronically linked to an input device, such as a barcode scanner at a checkout register, to automatically update the inventory information. In this implementation, the automated inventory tracking system is also connected to the purchasing system, e.g., by the Internet or by a continuous or periodic telephonic dataline connection, and can communicate using EDI or XML or other electronic commerce standards. The inventory tracking system can simply send the purchasing system a set of records from the tracking system database. These records are imported, either directly or

with database conversion software, into the product list database.

Of course, many other procedures can be used to transfer information about the goods the seller is offering into the product list database. For example, the information could be entered manually in response to a telephone call or facsimile by the seller, or the
5 information could be transmitted by a wireless two-way pager, personal digital assistant (PDA), or similar device.

It should be noted that the seller can offer products on the purchasing system web site that are not displayed or even available in inventory at the seller's location at the time of the order. For example, some products can be held only in storage or sourced by the
10 seller after an order is received.

Once at least one seller has loaded its product listing into the purchasing system database, a buyer can use the Internet to access the purchasing system web site and search for goods. Initially, as shown in Figure 6, the buyer registers with the purchasing system and creates an account (step 200) by providing information, such as the buyer's name,
15 address and electronic mail address. The purchasing system can assign a buyer identification number (BuyerID) to the buyer. Registration can be made optional to allow the buyer to perform searches on some or all of the purchasing system web site without prior registration. The buyer can also provide billing information, such as a billing address, credit card information, or bank account, and authentication information, such as a
20 password, photograph, or voice sample. If the buyer does not provide the billing information earlier, the purchasing system will request the billing information when the buyer actually decides to purchase goods. The purchasing system can also offer membership in various groups to receive special offerings, discounts, electronic mail messages, and the like. The purchasing system can ask for demographic information to
25 improve the quality of the search results, and can require payment of a membership fee.

The purchasing system web site permits the buyer to search the product list database for products of interest. Specifically, the purchasing system includes a search function, implemented with conventional database tools, that identifies products in the database that fit the requirements specified by the buyer. For example, the buyer can
30 search by product type, seller, manufacturer, price, specific location, distance from particular locations, and the like.

Initially, the buyer selects one or more locations which represent the areas where

the buyer is interested in picking up goods (step 202). The locations can be general, e.g., a city or zip code, or specific, e.g., a home or work address, or a route between two locations. The purchasing system can convert the locations provided by the buyer into longitude and latitude coordinates or into other convenient locational data for later use in
 5 the search function. The purchasing system records the buyer's profile data, e.g., in the buyer database or in a cookie (step 203). Alternatively, the locational information may be extracted from information provided during registration.

Then the buyer uses the search functions on the purchasing system web site to browse for desired products (step 204). For example, the buyer can search by product
 10 type and price range. Alternatively, the buyer can search by manufacturer and location. The purchasing system generates a list that satisfies the search criteria (step 208). The search results can also include product names, prices, store names, and pickup locations. The search results can be ranked, e.g., alphabetically by product name, by price, by distance from a selected address, or the like. The buyer reviews the search results, and
 15 either refines the search, or selects a particular product (step 210). The purchasing system retrieves and displays the price, pickup time and pickup location options for the selected product (212). The buyer can then elect to purchase the product (step 214), in which case the purchasing system records the necessary product order information (step 216). At this point, the purchasing system can also verify the availability of the selected goods at the
 20 various pickup locations (step 217). For example, the purchasing system can check the automatic inventory tracking system of a seller that is connected to the purchasing system. The buyer selects a pickup location and a pickup time (step 218). This information is also recorded by the purchasing system (step 220). The buyer can continue to shop for other products, or the buyer can arrange for payment, e.g., by submitting a credit card number
 25 and a digital signature (step 224). Of course, many of these steps can be performed in a different order. The buyer's location information can be entered during registration, during the initial search, or after a list of products has been displayed to narrow the search, or only once a specific product has been selected to purchase. The pickup location and pickup time may be specified before the products are selected. For example, the buyer
 30 could specify a certain pickup location as one of the search criteria. The initial search results can display information other than the product names, and the product names can be displayed only after the search is refined with a product type. If multiple goods are

being ordered, the system can find locations that have more than one of them or can find the most convenient set of multiple locations. In addition, once the buyer has selected a pickup location, product-based search results can include comparable products, substitute and alternative products that are available at the selected location. The buyer may wish to
 5 pick up a substitute product to minimize the buyer's travel time.

The list of products and associated prices displayed by the purchasing system can be tailored to the particular buyer, the buyer's characteristics, and the buyer's requirements as well as the sellers and their locations or characteristics. The purchasing system can optionally accumulate information about purchasing patterns of individual
 10 buyers and use this information to determine which products are presented on the list. For example, the seller can specify that certain products should be listed only for buyers in certain locations, with certain buying habits or characteristics, or who are willing to pick up items at certain times. In addition, products that are delisted, e.g., because the seller is out of stock, may or may not be presented in the list.

Unlike traditional electronic commerce systems, in which the products must be either delivered by the seller or by a third-party service to the buyer, or picked up by the buyer at the seller's store, the purchasing system permits the buyer to arrange for pickup of the products at an "intermediate" location, i.e., a location other than the locations of the seller's inventory (the seller's retail store, wholesale store or warehouse) or the buyer's
 20 regular mailing addresses (the buyer's home address, work address, P.O. Box, and the like). It is often inconvenient for the buyer to travel to the seller, and delivery directly to the buyer (either by the seller or by a third-party delivery service) increases the cost of the goods. In short, it can be more cost effective for the buyer and seller to "meet in the middle". Specifically, if the seller designates a limited number of intermediate pickup
 25 locations, the seller can reduce the delivery costs. If the buyer can select an intermediate pickup location to which he or she would travel anyway, such as a school, church, supermarket, convenience store, gas station, bank, or restaurant, shopping mall, dentist, doctor, golf course, gym, stadium, rest stop, roadside stand, bus stop or train station. Alternatively, the intermediate pickup location can be a location, e.g., a street corner, on
 30 or near the buyer's travel route from home to work, the buyer's inconvenience is minimized. The buyer can still elect to pick up the goods at the seller's retail location, or have the goods delivered by the seller or by a third-party delivery service to the buyer's

home or work address.

The intermediate locations can be searched and listed by the purchasing system as if they were retail locations, or they can be listed only after a specific seller is selected. Some intermediate locations can be associated with particular sellers or chains. Such affiliated locations can appear in the database like regular store locations, or the seller can specify that the affiliated intermediate locations are only displayed once a regular retail location is chosen. Different products can be offered for delivery at different intermediate locations, and the products can have prices and pickup times that differ from those of the products at the seller's retail store or other inventory location. It should be noted that the seller can offer products at intermediate locations that are not available at the seller's retail location. In addition, the seller might even operate as "pickup only", i.e., they have no in-store display of goods.

Multiple sellers can be associated with a single intermediate location. An intermediate location for one seller can be the primary location for another, e.g., one seller can arrange for pickup of good at another seller's store. The intermediate location can have pickup hours that are similar or different to those of other intermediate locations, and a single intermediate location associated with multiple sellers can have different pickup hours for different sellers.

In addition, some intermediate locations can be temporary, and may provided by moving transports rather than static structures. For example, the seller or the operator of the purchasing system can operate a roving van or truck that travels from one intermediate delivery location to another. The truck would return periodically to the location of the sellers' inventories to be stocked with ordered products. The truck route can be calculated using conventional routing techniques.

The purchasing system can use the information in the database, such as buyers' commute routes, buyer' pickup trip lengths, and sellers' addresses, to determine new intermediate locations that would provide shorter pickup trips. In general, these new intermediate locations are calculated to minimize the travel distance or travel time of all the buyers, all the sellers, or both the buyers and sellers, in a particular area defined by the operator of the purchasing system. These minimization calculations may be performed with conventional techniques. The suggested pickup locations can be sent to the sellers, who can decide to accept the new location. The seller can also use this information to

The purchasing system can also include an auction option which permits a buyer to have sellers bid to provide the selected goods. In this system, illustrated by Figure 8, the

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advertisement for donuts, coffee or a restaurant breakfast. As another example, the purchasing system can display advertising for stores along the route between the buyer's home and the delivery address. These advertisements and offers can also be provided on maps or driving directions generated by the purchasing system to guide the buyer to the pickup location. The advertisements can also be tailored for product-based cross-selling based on the buyer's past purchase patterns and current purchase information. The purchasing system can display advertisements for both registered sellers and non-registered sellers. For registered sellers, the advertisement can suggest an online purchase on the purchasing system, and if a user clicks on the advertisement, the purchasing system can jump directly to a product list for the advertiser.

The purchasing system can also implement a geographically-based loyalty program that can include multiple sellers and types of sellers having different or independent inventory systems. Since the purchasing system tracks a buyer's purchases for a large number of sellers, it can arrange cross-store discounts. For example, a buyer's purchase of a product from one seller can trigger an immediate discount offer, rebate or coupon, or a later mailing, for one or more products sold by another seller located in the same geographic area, e.g., in the same mall complex.

Information stored in the transaction and customer databases can be used to characterize the willingness of buyers to pay for delivery. For example, the buyers can be sorted into groups depending on the average distance between the buyer's address and the pickup location. Thus, buyers who are willing to pay more for a delivery close to their primary address can be separated from buyers who are willing to travel further in order to pay less. The purchasing system can use the information on buyer preferences to determine which advertisements, goods, or special offers to display to a specific buyer. For example, advertisements and offers for home delivery services can be displayed to buyers who are willing to pay for a delivery close to their primary address.

A variety of ordering options are supported by the purchasing system 10. For example, a buyer using the purchasing system web site can designate an order as a standing order to be executed automatically by the purchasing system at periodic intervals, e.g., every week or month. For a standing order, the purchasing system will send a reminder, by an electronic mail message or an automated phone message, of the schedule pickup time for the goods. Also, the buyer can create an "on-demand" order that the

buyer can activate by a phone call, electronic message, or the like. A buyer can reexecute a previous order. A buyer can also maintain preselected shopping lists, each containing multiple preselected products from the product database. The preselected shopping lists can be used to reduce the time spent by the buyer in selecting products. A buyer can also
 5 create a list of products that other buyers may be interested in purchasing for them, e.g., a gift list, such as a bridal registry, birthday list, or Christmas list.

A buyer can also order products or create product lists without accessing the purchasing system web site. For example, as illustrated in Figure 9, a seller can distribute printed advertisements or catalogues 180, e.g., in flyers, newspapers, magazines, or
 10 posters, that include a product ID 182 and a telephone number 186. The seller can also distribute the advertisements on television, radio, or the Internet. By calling the telephone number, the buyer is connected to an automated telephone system with a server interface to the purchasing system. The buyer can then enter a Customer ID and personal
 identification number (PIN) and order the desired products by punching the product ID
 15 182 on the telephone keypad. In addition, authentication information, such as a password or voice identification, can be entered.

Alternatively, the catalog or advertisements can include a barcode 184 that represents the product ID. The buyer may have a personal digital assistant (PDA) 190, such as a Palm™ organizer that is equipped with a barcode reader 192. The buyer then
 20 scans the barcode 184 in the catalog or advertisement 180, and the product ID is stored in the PDA 190. Several barcodes can be scanned to create a list of products. Also, the buyer can add products to the list by scanning the barcodes on goods displayed in a store. Once the list is assembled, the PDA can transmit an electronic message to the purchasing
 system with the product IDs to purchase the goods. The message can be sent directly,
 25 e.g., through a wireless connection or a pager connected directly to the PDA, or indirectly, e.g., by synchronizing the PDA with buyer's computer system, which can then send an electronic message to the purchasing system. Alternatively, the PDA can be linked to directly control the telephone, or it can be equipped with a speaker 194 and software to cause the speaker to emulate telephone tones corresponding to the product ID. In this
 30 case, the buyer can call the automated telephone system, and then use the PDA to send the necessary tones corresponding to the product ID. The pickup location can be predetermined by the seller, or the buyer can select a pickup location from a list presented

during the telephone call, or the pickup location can be determined by the purchasing system from a dialing location or other address. Similarly, the pickup time can be predetermined by the seller, or the buyer can select a pickup time from a list.

Furthermore, a product retailer, wholesaler, distributor or manufacturer can create
5 a link on its web site to access the purchasing system web site. By selecting the link, a user can send a message to the purchasing system to generate an order automatically. In addition to web sites and telephones, the purchasing system can use other technologies, such as electronic mail, interactive television, two-way pagers, video phones, kiosks, and voice recognition systems to send and receive product orders.

10 In addition, the web site may offer a downloadable computer program that can be installed on the buyer's computer system. When the buyer uses the network browser, the computer program displays a banner on the browser screen. As the buyer visits various web sites (i.e., sites other than the purchasing system web site), the computer program receives information (e.g., directly from codes embedded in the web page or interpreted
15 from the contents of the web page) that identify goods being sold on the web page, contacts the purchasing system, and determines whether similar or identical goods are available through the purchasing system, e.g., at a closer pickup location. This information can then be displayed on the banner.

Returning to Figure 6, once the buyer has entered the payment information and
20 confirmed the order, the purchasing system verifies the payment information (step 226). Then the purchasing system sends an order summary to the buyer and the seller (step 108). The buyer can purchase goods from one or more sellers and arrange for pickups at multiple locations. In this case, the purchasing system can provide supporting data such as driving directions or maps in a confirmatory electronic mail. If the buyer purchases goods
25 at multiple locations, the purchasing system can calculate driving directions for the buyer to reach multiple pickup locations. These driving directions can be provided on the order summary. The calculation of an optimal travel route can be performed with conventional geocoding and route selection algorithms.

In order to receive orders from the purchasing system, the seller maintains a
30 communication connection, e.g., an Internet address, phone number, pager number or fax machine. Once the buyer confirms the order, the purchasing system sends the order to the seller, e.g., by electronic mail, automatic message system, alphanumeric page, or

computer-generated fax (step 108). The order identifies each purchased good, for example, with a product ID, model number or retailer SKU code, and the customer's name, pickup time, pickup date, and authentication information.

When the seller receives the copy of the order, the seller needs to deliver the goods
5 to the pickup location (step 110). As illustrated in Figure 10, this step begins when the seller receives the order (step 250). An employee retrieves the products from storage, from the retail area, or from an off-site location (step 252). Assuming the products are being retrieved from a storage area in the seller's retail outlet or warehouse, the purchasing system or the seller's computer system can list the products in a sequence to
10 provide the shortest route through the storage area. This reduces the time needed by the employee to collect the products. This calculation of the sequence can be performed with conventional route selection algorithms. As the employees locate the ordered goods, they can scan the products or otherwise record the retrieval of the products to update the local inventory (step 254). The pickup can be recorded and a receipt can be generated using a
15 seller's existing checkout system.

For example, in one implementation suitable for a retail outlet, a small portable electronic device, such as a PDA with a barcode reader, is connected, e.g., by a cradle, to a first computer that receives the order from the purchasing system. The order, with a list of UPC#s and product identifiers, is downloaded into the PDA. Then an employee
20 removes the PDA from the first computer, retrieves the listed goods, and brings the goods to the pickup counter. The barcode reader on the PDA can be used to record the goods as they are picked. Finally, the PDA is connected to a second computer that is part of seller's existing checkout system. The PDA uploads the list of retrieved goods into the automatic inventory system, which can calculate the total price and generate a receipt, much like an
25 ordinary checkout stand. Goods that the employee did not retrieve can be identified.

If the products are being picked up at the seller's location, then they can be held at a pickup counter (step 256). Otherwise, the products are delivered to the pickup location by the seller or by a third-party delivery service (step 258). A list of delivery service options can be included in or assigned by the purchasing system to facilitate the delivery
30 step. The selection of the third-party delivery service can involve an automated auction that is conducted for delivery route and price once an the order has been received. One delivery service option can be to have a customer who is leaving the store deliver another

The purchasing system or seller's computer system can be connected to a set of adjustable signs, e.g., liquid crystal, CRT, or LED displays, located in the seller's inventory area. The seller's computer system can cause the signs to indicate the identity and location of the products that need to be retrieved. For example, if the inventory area is a warehouse, the signs can be located at the ends of the storage aisles. Employees in the inventory area can read the signs, collect the indicated products, and bring them to a pickup counter. Alternatively, multiple collection bins can be placed in the inventory area, e.g., adjacent the signs. Employees can see what products need to be gathered by looking at the signs, and then deliver the products to the bins. Each collection bin can have a barcode reading system. When an employee places a product in the bin, the barcode reading system reads the barcode on the product, the local inventory is adjusted, and the goods are no longer displayed on the sign.

When the buyer arrives at the pickup location, he or she typically presents a picture identification or credit card, signs a receipt, and leaves with the ordered products (step 112). Since the buyer has prepaid and has a scheduled a time for pickup, lines are eliminated and fulfillment times for these orders can be dramatically decreased. If a product is not picked up, within a certain amount of time the purchasing system can send the customer a reminder by electronic mail, automated phone system, or the like. that the

product is ready. The system can also record when pickup occurs, digitally capture a signature, or record the swipe of a credit card or membership card. If a product turns out to be missing when the customer arrives for pickup, the system can use the information on distance traveled to calculate the appropriate compensation to be offered by the seller.

- 5 Alternatively, the system can suggest alternative products for substitution.

The pickup of orders can be automated once the goods have been picked. For example, as shown in Figure 11, one or more programmable compartmentalized containers 300 can be located at the seller's inventory location or intermediate locations. The container 300 has a number of compartments 302. The compartments can be insulated
10 and can be set with temperatures above or below the ambient temperature. When the products are delivered to the pickup location, the seller's employees or the third-party delivery service can place the products into one or more of the compartments 302 and program the container with an authorization code. When the buyer arrives to pick up the products, the buyer enters authorization information, e.g., a password on a keypad 304, or
15 swipes an identification card through a magnetic card reader. This permits 24-hour automated and unattended pickup. Such a system can also incorporate vending compartments that store goods that can be purchased by charging the same account that was charged to gain access to the container.

On occasion, the seller will need to update the product information, e.g., changing
20 inventory, changing prices, delisting products, or adding new products. If the seller performs automated inventory tracking with a computerized inventory, any changes in the products can be loaded into the purchasing system automatically. However, stores that do not maintain an automated inventory tracking need a procedure for updating their listings.

A first option for updating product information is for the seller to access the
25 purchasing system web site. Specifically, the web site can have a secure log on screen in which the seller confirms its authorization with a password. If the seller decides to add new goods, the initial product information entry form can be presented. If the seller decides to change product information for a good that has already been entered into the purchasing system database, then the web site can display a list of previously entered
30 goods with a set of changeable fields, e.g., the price, stock, list status and minimum stock. The web site can permit a search to locate products. The seller enters the changes on a form displayed by the web site, and the purchasing system checks for error and blank

fields, then prompts for additional information if necessary. Finally, the seller confirms the changes.

A second option for updating product information is an automated interactive telephone system. In this option, the seller dials a phone number, and an automated voice system leads the seller through various options for changing the product information. The seller can respond to inquiries by voice response or by pushing phone keys. The interactive phone system initially requests the seller's Store ID and password or personal identification number (PIN). Then the seller can select from delisting products, changing product prices, and changing current or minimum stock for products. For each product, the seller enters the UPC# or other identifying number for the products. To change the price or stock for a product, the seller would also need to enter the new price or quantity, respectively.

A third option for updating product information is for the seller to use a PDA to create a file with a list of changes. Such a list can be created from scratch, or it can be generated from similar past lists. The seller can download the file from the PDA to modify the product information, e.g., by wireless technology or by synchronizing the PDA with a computer system.

For sellers that use a checkout scanner or a manual order entry system to track inventory automatically on a real-time basis, the purchasing system provides an automatic communications link, e.g., over the Internet or by a direct telephone connection, for the inventory tracking system to load and update product information. For example, the product information can be updated at regular intervals, e.g., by sending a database change file from the inventory tracking system to the purchasing system each evening. Alternatively, the purchasing system can communicate with the automatic tracking system on a real-time basis. For example, each time a scanner registers an item as sold, the tracking system can send a message to the purchasing system to reduce the quantity as stored in the purchasing system database.

The purchasing system can also provide Internet text chat, voice or video to link one or more people operating and maintaining the purchasing system, to other sellers, or to one or more buyers. This can facilitate a variety of administrative, training, and customer support issues associated with implementing and operating such a purchasing system.

The purchasing system can also supports cross-stocking between different sellers. Specifically, the purchasing system permits different sellers to share inventory listings and send messages requesting products from each other. Sellers can even be listed as intermediate locations for other sellers. These aspect of the purchasing system allow stores
5 to fulfill orders when they are out of stock.

The methods performed by the purchasing system program can be implemented in hardware, firmware, software, or combinations thereof, and instructions to carry out the methods can be stored in a computer program product tangibly embodied in a computer readable storage device. Storage devices suitable for tangibly embodying the computer
10 program include all forms of non-volatile memory, including semiconductor memory devices, magnetic disks, including removable "floppy" disks, magneto-optical disks, and optical disks.

WHAT IS CLAIMED IS:

1. A method performed by a computer-implemented purchasing system, comprising:
receiving a first user input from a seller indicating a product identification for each
of a plurality of goods, and one or more pickup locations that differ from locations where
5 the seller maintains a regular inventory;
receiving a second user input from a buyer selecting one of the goods and one of
the pickup locations, wherein the selected pickup location is an intermediate location that
differs from any of the buyer's primary addresses; and
providing an order report to the seller identifying the selected goods and pickup
10 location.
2. The method of claim 1, further comprising displaying the product identification and
a price for at least some of the plurality of goods to the buyer on a web page.
- 3 The method of claim 1, wherein for each good, each pickup location has an
associated price.
- 15 4. The method of claim 1, the first user input also indicates permitted pickup times,
and the second input from the buyer also selects a pickup time from the permitted pickup
times.
5. The method of claim 4, wherein for each good, each permitted pickup time has an
associated price.
- 20 6. The method of claim 1, further comprising receiving locational information from
the buyer, and displaying at least one proposed pickup location based on the locational
information from the buyer.
7. The method of claim 6, wherein the locational information includes the buyer's
home address and work address, and wherein the selected pickup location is near the
25 buyer's travel route between home to work.
8. The method of claim 1, wherein the user input from the seller specifies at least two
pickup locations each associated with different goods.
9. The method of claim 1, wherein the first user input is received through a web site.
10. The method of claim 1, wherein the first user input is received through an
30 automated telephone system or a personal digital assistant (PDA) device.
11. The method of claim 1, wherein the second user input is received through a web
site.

12. The method of claim 1, wherein the second user input is received through an automated telephone system or a personal digital assistant (PDA) device.

13. The method of claim 1, further comprising adjusting the price based on the selected pickup location.

5 14. A method performed by a computer-implemented purchasing system, comprising:
 receiving a first user input from each of a plurality of sellers, each first user input indicating a product identification for at least one good, and one or more pickup locations that differ from locations where the seller maintains a regular inventory;
 receiving a second user input from a buyer selecting one of the goods and one of
 10 the pickup locations, wherein the selected pickup location is an intermediate location that differs from any of the buyer's primary addresses; and
 providing an order report identifying the selected goods and pickup location to the seller associated with the selected goods.

15 15. A method performed by a computer-implemented purchasing system, comprising:
 receiving a first user input from each of a plurality of sellers who operate independent inventory systems, each first user input indicating a product identification for at least one good and a plurality of pickup locations;
 receiving a second user input from a buyer selecting one or more of the goods and one of the pickup locations; and
 20 providing an order report to the seller associated with the selected one or more of the goods identifying the selected goods and the selected pickup location.

16. The method of claim 15, further comprising:
 before receiving the second user input, receiving a third user input from a buyer indicating a first location;
 25 displaying a list of goods on a web page being viewed by the buyer, the list including goods from a seller with a pickup location within a predetermined distance of the first location.

17. The method of claim 15, wherein the first user input identifies a plurality of pickup times, the second user input selects one of the pickup times, and the selected pickup time is provided in the order report.

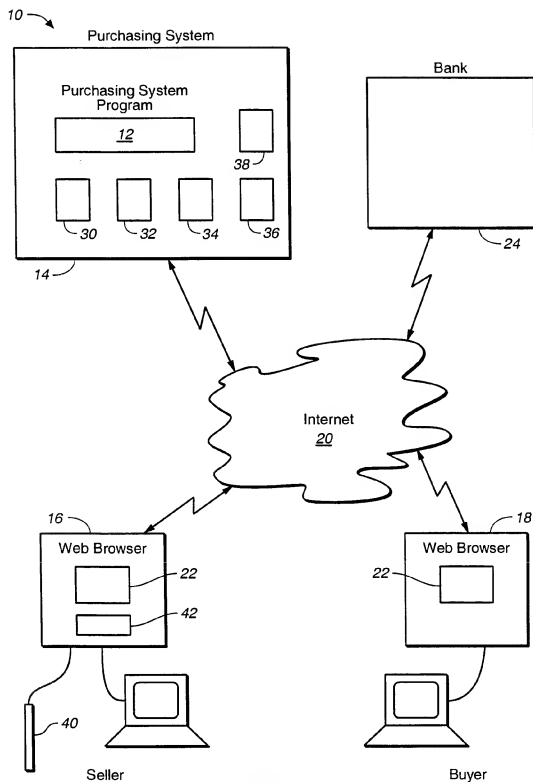
30 18. The method of claim 15, further comprising adjusting the price for the selected good based on the distance between the first location and the pickup location.

- 19 The method of claim 15, further comprising assigning an identification number to the buyer, and wherein the second user input is a numeric input that includes the identification number.
- 20 The method of claim 19, wherein the numeric input is generated by an automated
5 telephone system or portable personal digital assistant (PDA).
- 21 The method of claim 20, further comprising distributing advertisements containing a telephone number and a numeric code for at least one of the plurality of goods.
- 22 The method of claim 20, further comprising distributing advertisements containing a barcode for at least one of the plurality of goods.
- 10 23 The method of claim 22, wherein the PDA includes a barcode scanner, and the method further comprises scanning the barcode to generate the numeric input.
- 24 A method performed by a purchasing system, comprising:
receiving a first user input from each of a first plurality of sellers, each first user input indicating at least one location for an associated seller;
15 receiving a second user input from each of a second plurality of sellers who operate independent inventory systems, each second user input indicating a product identification for each of a plurality of goods and one or more pickup locations;
receiving a third user input from a buyer selecting one or more of the goods and one of the pickup locations, and identifying a pickup time;
20 selecting one of the first plurality of sellers based on a comparison of the first location and the pickup location; and
displaying an advertisement for the selected seller on a web page being viewed by the buyer.
- 25 25 The method of claim 24, wherein the second user input indicates a pickup time, and the method further comprises selecting one of the sellers based on the pickup time.
- 26 The method of claim 24, wherein the second user input indicates a good, and the method further comprises selecting one of the sellers based on the good.
- 27 The method of claim 24, further comprising retrieving information concerning previous transactions by the buyer, and selecting one of the sellers based on the previous
30 transactions.
- 28 The method of claim 24, wherein the second location is a primary address of the buyer, such as a home address or a business address.

29. The method of claim 24, wherein the second location is an intermediate location.
30. The method of claim 24, wherein the second location is the location of the seller's inventory.
31. A method of operating an inventory system, comprising:
 - 5 storing inventory in a region accessible to a customer;
 - providing a customer with identification;
 - receiving an order for a good ordered by a buyer other than the customer;
 - visually identifying the good ordered by the buyer in a manner visible to the customer;
 - 10 providing a credit to the customer if the customer brings the good ordered by the buyer to a specified location and provides the identification.
32. The method of claim 31, wherein the identification is a magnetic card or an identification number.
33. The method of claim 31, wherein the specified location is a bin located in the
15 region accessible to the customer or a service counter.
34. A method of extracting information concerning buyers on a computer-implemented purchasing system, comprising:
 - receiving a first user input from each of a first plurality of buyers, each of the user inputs specifying at least one primary address for an associated buyer;
 - 20 receiving a plurality of second user inputs from each of the first plurality of buyers, each of the second user inputs selecting a good and a pickup location; and
 - sorting the first plurality of buyers into a second plurality of buyers and a third plurality of buyers based on distances between the addresses and the pickup locations.
35. The method of claim 34, wherein an average of the distances between the primary
25 addresses and the pickup locations is greater for the second plurality of buyers than the third plurality of buyers.
36. The method of claim 34, further comprising delivering an advertisement to one of the buyers, wherein the advertisement is selected from a plurality of advertisements based on whether the one buyer is a member of the first or second pluralities.
37. A method of operating an inventory system, comprising:
 - 30 running an inventory tracking program to track inventory stored in a plurality of locations including a retail outlet, a local warehouse, and a regional warehouse;

- receiving an order from a buyer identifying a product and a pickup time;
automatically selecting one of the plurality of locations based on a time between a
time of the order and the pickup time; and
retrieving the product from the selected location.
- 5 38. The method of claim 37, further comprising adjusting a product price for a buyer
based on the selected location.
39. The method of claim 37, further comprising adjusting a product price based on a
time between a time of the order and the pickup time.
40. A method, comprising:
- 10 identifying a pickup location, other than a residential address of a buyer;
receiving from a buyer user input selecting a good and a pickup time;
providing the buyer with an authorization code;
storing the selected good in at least one compartment of a securable container at
the pickup location, the container having a plurality of compartments; and
- 15 opening the at least one compartment upon receipt of the authorization code.

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**FIG. 1**

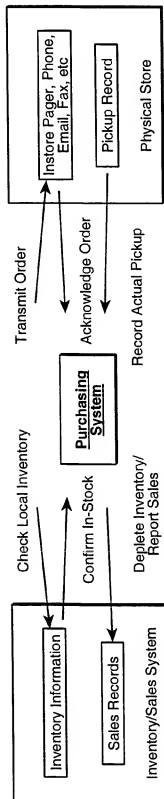


FIG. 2

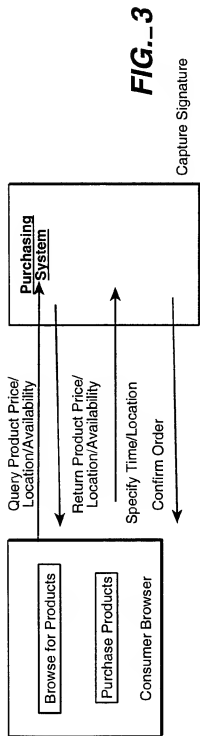
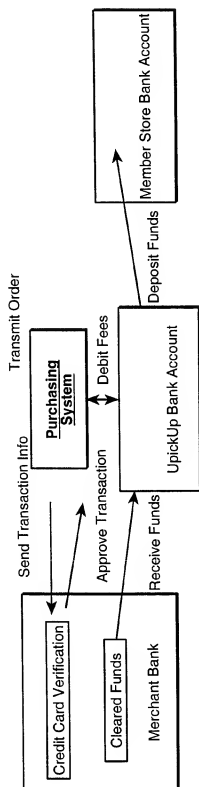
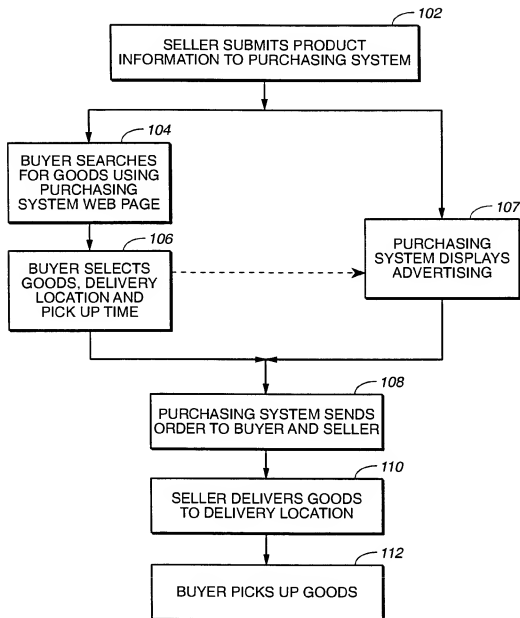


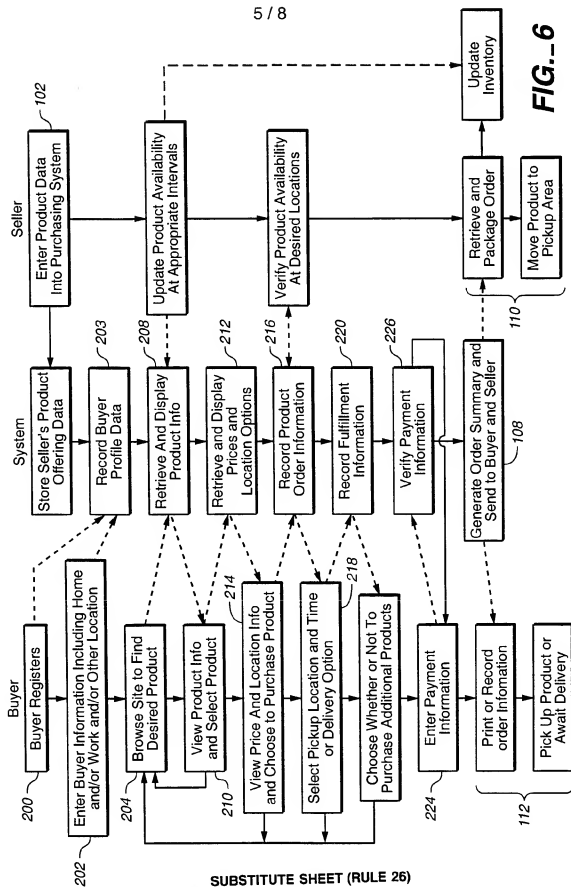
FIG. 3

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**FIG. 4**

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**FIG._5**



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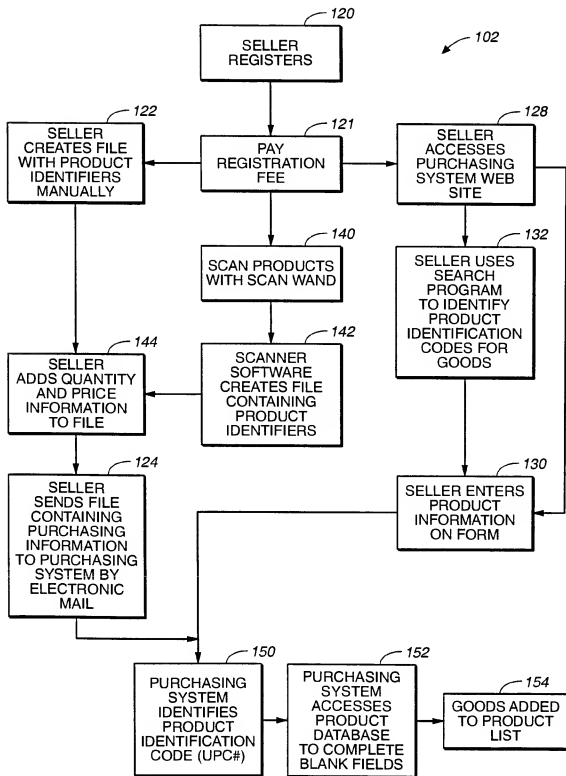


FIG. 7

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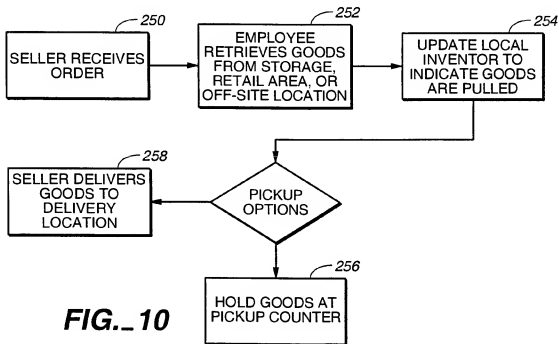
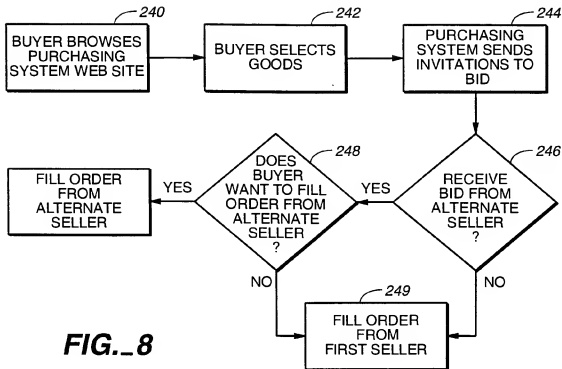


Figure 9

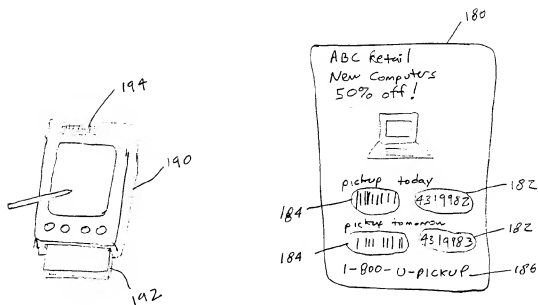
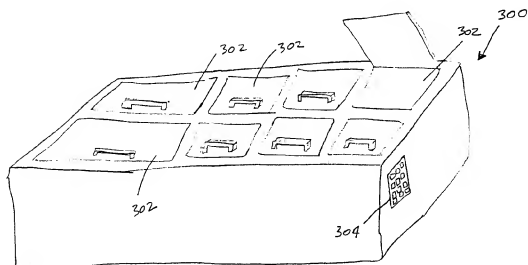


Figure 11



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/20080

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 17/60

US CL. : 705/27

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/27, 26, 14, 28

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

STN

search terms: buyer, purchaser, select, choose, designate, delivery, pickup, location

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	HTTP://WWW.VOLVOEUROPEANDELIVERY.COM/ Volvo Overseas Delivery Program, copyright 1999, 2000, see entire document.	1-40
Y,P	US 6,026,376 A (KENNEY) 15 February 2000, see the abstract, fig. 2, col. 4 lines 25-30, col. 7 lines 28-32, col. 10 lines 45-67, col. 13 lines 2-6.	1-40
Y,P	US 5,971,273 A (VALLAIRE) 26 October 1999, see the abstract, figs. 3, 5, 6.	1-40
A	US 5,742,931 A (SPIEGELHOFF et al) 21 April 1998, see the abstract.	1-40
A,P	US 5,983,201 A (FAY) 09 November 1999, see the abstract.	1-40



Further documents are listed in the continuation of Box C.



See patent family annex.

- * Special categories of cited documents
- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document published on or after the international filing date
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- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- *Z* document member of the same patent family

Date of the actual completion of the international search

03 SEPTEMBER 2000

Date of mailing of the international search report

03 OCT 2000

Name and mailing address of the ISA/US
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